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DIVISION OF OIL, GAS AND MINING

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TO: Internal File

THRU.: Priscilla Burton, Senior Reclamation Specialist, Team Lead

FROM: Wayne H. Western, Senior Reclamation Specialist WHW

RE: Reclamation Plan, Energy West Mining Company, Cottonwood/Wilberg Mine, C/015/019-AM00B-3

SUMMARY:

On July 2, 2001, the Division received the 3th round for amendment AM00B, which is a revised reclamation plan for the Cottonwood/Wilberg mine. The engineering issues in AM00B are highwall elimination, reclamation maps and cross sections, and bond calculations. The Division found that all those issues were adequately addressed in the submittal. However, the bond calculations do not contain all the information that the Division requested. Instead, the Permittee made some conservative assumptions about reclamation costs. The Division believes that those assumptions will result in a bond amount that is sufficient to ensure reclamation in the event of bond forfeiture. The Division believes that the bond amount could be reduced if the Permittee were to use more detailed cost estimates.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The definitions of AOC contained in the Surface Mining Control and Reclamation Act (SMCRA) and the Utah coal rules are primarily statements of the objectives of postmining backfilling and grading so that the area "closely resembles the general surface configuration of the land prior to mining" and "blends into and complements the drainage pattern of the surrounding terrain." At the same time, reclamation performance standards must be met, including controlling erosion, establishing mass stability and establishing permanent, diverse and effective vegetative cover. In some circumstances, replicating the original contour may only be possible at the expense of one or more reclamation performance standards. In other circumstances, it may be possible to achieve nearly exact original contour and simultaneously satisfy all the other regulatory requirements.

The underlying objectives of the AOC requirements relate to the assumption that postmining features which mimic pre-mining features are most likely to quickly achieve mass and erosional stability, revegetation, hydrologic balance, and productive post-mining land use, all of which are the objectives of the reclamation performance standards. AOC also addresses aesthetic considerations. In order to evaluate methods for achieving AOC, the underlying objectives and challenges of reclamation at the site in question must first be identified.

Final Surface Configuration

The main question that is used to determine if the site meets this requirement is: "Does the postmining topography, excluding elevation, closely resemble its pre-mining configuration?" Since the site is pre-SMCRA, the permittee does not have accurate pre-mining topography. Therefore, the Division will base the analysis on whether the site resembles the surrounding undisturbed topography. The Division relies on the judgement of the technical staff that reviews the reclamation plan. The staff reviewed all the operational and postmining topographic maps and cross sections and determined that this condition is met based on the following:

- The existing topography and the proposed reclamation topography are shown on drawing CM-10500-WB, Cottonwood/Wilberg Mine Final Reclamation Map Stage I, the second stage is shown on drawing CM-10378-WB. The final cross sections are shown on CM-10484-WB.
- The reclaimed surface configuration is similar to that shown in the undisturbed areas and to the regional topography.
- The amount of cut material that will be handled during reclamation is 143,879 cubic yards and the amount of fill needed is 131,499 cubic yards. The cut and fill calculations do not match, but are within 10% so the Division feels that the earthwork plan is adequate. Volume estimates at best are ± 10%. See earthwork calculations on drawing CM-10500-WB.

All Spoil Piles to be Eliminated

No spoil piles are associated with this site.

All Highwalls to be Eliminated

The highwall locations are shown on drawing CM-10484-WB. The drawing shows the location of all operational highwalls and the cross sections show the existing topography and the proposed reclaimed topography. Drawing CM-10500-WB shows the location of the highwall remnant that will exist after final reclamation.

The highwall remnants are located on or near cliffs. In most cases, the locations where the highwalls stop and the nature cliffs start are difficult to determine. The permittee could eliminate the highwall remnants by placing more fill along the highwall. From the cut and fill calculations, the permittee does not have access to much additional fill material on the site.

If additional fill material were to be imported to eliminate the highwalls, then the permittee would have to increase either the reclaimed slope angle and thus decrease the slope stability or place material in the drainage which would decrease the compatibility of the reclaimed channels with the existing channels.

Under the provision of R645-301-553.500, highwall remnants can be left if: 1) the remaining highwalls are compatible with the postmining land use, 2) provide for adequate drainage, 3) the highwall remnants are stable, and 4) the permittee does not have access to reasonable available spoil to eliminate the highwalls. The Division has found that the reclaimed site will be compatible with the postmining land use. See the postmining land use section of the TA for more details. The drainage proposed for the reclaimed site has been found to be compatible with the undisturbed drainages. See the reclamation hydrology section of the TA for more details. The highwall remnants are in bedrock and will be stable. The Division reviewed the cut and fill calculations and determined that all reasonable available fill material will be used for highwall elimination.

The Division has determined that the permittee has eliminated all highwalls to the extent technologically partible and that the proposed highwall remnants meet the requirements of R645-301-553.500.

Hydrology

The main concerns with hydrology are that the drainages are restored, sediment is controlled, and that no hazardous or toxic discharges will occur. The Division considers that those conditions will be met when the hydrologic reclamation requirements are met.

Post-Mining Land Use

The Division has found that the application meets the general post-mining land use requirements.

Variance from AOC

The Permittee did not request a variance from AOC.

General Backfilling and Grading

The Division analysis of the general backfilling and grading requirements is in the backfilling and grading section of this TA. The Division has found the general backfilling and grading requirements are satisfied.

Findings:

The permittee meets the minimum approximate original contour restoration requirements of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Reclamation backfilling and grading maps

The backfilling and grading operations at the Cottonwood/Wilberg mine will be done in two stages. The first stage is shown on drawing CM-10500-WB, Cottonwood/Wilberg Mine Final Reclamation Map Stage I, the second stage is shown on drawing CM-10378-WB. The final cross sections are shown on CM-10484-WB.

The maps and cross sections show the surface configuration after reclamation has been completed. The maps and cross sections are adequate for the Division to determine that the backfilling and grading plans are adequate, and that the site will be restored to AOC.

Reclamation facilities maps

The location of the riprap channels, culverts, and the road including the turnaround are shown on drawing CM-10378-WB.

Final surface configuration maps

The final surface configuration for the Cottonwood/Wilberg mine is shown on drawing CM-10500-WB, Cottonwood/Wilberg Mine Final Reclamation Map Stage I, the second stage is shown on drawing CM-10378-WB. The final cross sections are shown on CM-10484-WB.

Findings:

The permittee has met the minimum requirements for supplying the Division with reclamation maps and cross sections.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of bond amount

The permittee gave the Division updated reclamation cost estimates for the Cottonwood/Wilberg mine. The update costs include detailed earthwork calculations and equipment productivity. The demolition costs were based on old productivity data.

The Division reviewed the information supplied by the permittee and found that they used some conservative data for estimating reclamation costs. Some of the assumptions and methods were different from those used by the Division. However, the Division believes that those assumptions are sufficient to calculate a reclamation bond amount that will be sufficient to ensure that the Division can reclaim the site in case of bond forfeiture. If the permittee wants to reduce the bond amount, the Division recommends that the permittee uses the methodology usually used by the Division.

The permittee calculated that the reclamation bond amount should be $3,082,587 in 2005 dollars. The Division has reviewed the bond calculations and considers that amount adequate.

Findings:

The permittee met the minimum regulatory requirements for suppling the Division with information on reclamation cost estimates.

RECOMMENDATIONS:

The Division should approve amendment AM00B and require the permittee to post a reclamation bond in the amount of $3,082,587.